Listing of Claims:

1. (Currently Amended) A microdissection apparatus comprising:

a laser light source to emit laser light; and

a laser light irradiation optical system to irradiate a sample with the laser light from the laser light source;

wherein the laser light irradiation optical system comprises: (i) an active optical element on which ~~forms variable~~ a variable pattern ~~which is~~ set to correspond to a necessary area is formed, and (ii) a guide optical system which is positioned between the active optical element and the sample; and

wherein the laser light is irradiated ~~to the sample through the pattern formed on~~ through the active optical element on which the variable pattern is formed, and guided to the sample by the guide optical system so that a portion of the sample corresponding to ~~obtain~~ the necessary area ~~from the sample~~ is irradiated with the laser light.

2. (Original) The microdissection apparatus according to claim 1, further comprising a pattern image projection optical system, which projects an image of the pattern formed on the active optical element onto the sample.

3. (Original) The microdissection apparatus according to claim 2, further comprising an observation optical system, which acquires an observation image of the sample.

4. (Previously Presented) The microdissection apparatus according to claim 3, further comprising a display unit to display the observation image acquired by the observation optical system, and an input unit to input information for setting the pattern formed on the active optical element.

5. (Previously Presented) The microdissection apparatus according to claim 3, further comprising a control unit to set the pattern formed on the active optical element based on the observation image acquired by the observation optical system.

6. (Previously Presented) The microdissection apparatus according to claim 1, wherein the laser light irradiation optical system selectively irradiates a part of the sample that surrounds the necessary area with the laser light in accordance with the pattern formed on the active optical element, and the laser light applied to the sample has an energy density sufficient for evaporating the sample, such that the part of the sample

irradiated with the laser light is evaporated so as to cut the necessary area from the sample.

7. (Currently Amended) The microdissection apparatus according to claim 1, wherein the ~~laser light irradiation~~ guide optical system ~~further~~ comprises an objective lens arranged close to the sample, a relay lens which is removably inserted into an optical path between the active optical element and the objective lens, and a relay lens insertion/removal mechanism to insert and remove the relay lens into and from the optical path;

wherein when the relay lens is inserted in the optical path, the active optical element forms the pattern corresponding to the necessary area, and the laser light irradiation optical system selectively irradiates a part of the sample excluding the necessary area with the laser light in accordance with the pattern formed on the active optical element; and

wherein when the relay lens is removed from the optical path, the laser light irradiation optical system converges a beam of laser light by the objective lens to irradiate the sample with the converged beam.

8. (Previously Presented) The microdissection apparatus according to claim 7, wherein, when the relay lens is removed

from the optical path, the converged beam of laser light has an energy density sufficient for evaporating the sample.

9. (Previously Presented) The microdissection apparatus according to claim 8, further comprising a movement mechanism, which relatively moves the sample and a beam spot of the converged beam of laser light formed on the sample;

wherein the beam spot of the laser light is relatively moved on the sample by the movement mechanism completely around an area to be collected including the necessary area, and a part of the sample irradiated with the converged beam of laser light is evaporated to be cut, such that the area to be collected including the necessary area is cut from the sample.

10. (Original) The microdissection apparatus according to claim 1, wherein the active optical element comprises a transmission type active optical element.

11. (Original) The microdissection apparatus according to claim 1, wherein the active optical element comprises a reflection type active optical element.

12. (Currently Amended) A microdissection apparatus comprising:

a light source means for emitting laser light; and

a laser light irradiation optical system to irradiate a sample with the laser light from the light source means;

wherein the laser light irradiation optical system comprises: (i) pattern forming means for transmitting or reflecting the laser light selectively in accordance with a variable pattern which is set to correspond to a necessary area, and (ii) optical guiding means, positioned between the pattern forming means and the sample, for optically guiding the laser light from the pattern forming means to the sample; and

wherein the laser light is irradiated to the sample through the variable pattern formed by the pattern forming means, and guided to the sample by optical guiding means so that a portion of the sample corresponding to ~~obtain~~ the necessary area ~~from the sample~~ is irradiated with the laser light.

13. (Original) The microdissection apparatus according to claim 12, further comprising a pattern image projection optical system for projecting an image of the pattern formed by the pattern forming means onto the sample.

14. (Original) The microdissection apparatus according to claim 13, further comprising an observation optical system for acquiring an observation image of the sample.

15. (Original) The microdissection apparatus according to claim 14, further comprising displaying means for displaying the observation image acquired by the observation optical system, and inputting means for inputting information for setting the pattern formed by the pattern forming means.

16. (Previously Presented) The microdissection apparatus according to claim 14, further comprising a controller for setting the pattern formed by the pattern forming means based on the observation image acquired by the observation optical system.

17. (Previously Presented) The microdissection apparatus according to claim 12, wherein the laser light irradiation optical system selectively irradiates a part of the sample that surrounds the necessary area with the laser light in accordance with the pattern formed by the pattern forming means, and the laser light applied to the sample has an energy density sufficient for evaporating the sample, such that the part of the sample irradiated with the laser light is evaporated so as to cut the necessary area from the sample.

18. (Currently Amended) The microdissection apparatus according to claim 1, wherein the ~~laser light irradiation~~ guide optical system ~~further~~ comprises an objective lens arranged close to the sample, a relay lens, which is removably inserted into an optical path between the pattern forming means and the objective lens, and a relay lens insertion/removal mechanism, which inserts and removes the relay lens into and from the optical path;

wherein when the relay lens is inserted in the optical path, the pattern forming means forms the pattern corresponding to the necessary area, and the laser light irradiation optical system selectively irradiates a part of the sample excluding the necessary area with the laser light in accordance with the pattern formed on the pattern forming means; and

wherein when the relay lens is removed from the optical path, the laser light irradiation optical system converges a beam of laser light by the objective lens to irradiate the sample with the converged beam.

19. (Previously Presented) The microdissection apparatus according to claim 18, wherein, when the relay lens is removed from the optical path, the converged beam of laser light has an energy density sufficient for evaporating the sample.

20. (Previously Presented) The microdissection apparatus according to claim 19, further comprising moving means for relatively moving the sample and a beam spot of the converged beam of laser light formed on the sample;

wherein the beam spot of the laser light is relatively moved on the sample by the moving means completely around an area to be collected including the necessary area, and a part of the sample irradiated with the converged beam of laser light is evaporated to be cut, such that the area to be collected including the necessary area is cut from the sample.

21. (Original) The microdissection apparatus according to claim 12, wherein the pattern forming means comprises a transmission type active optical element.

22. (Original) The microdissection apparatus according to claim 12, wherein the pattern forming means comprises a reflection type active optical element.

23. (Currently Amended) A microdissection method comprising:

forming a variable pattern on an active optical element such that the pattern is set to correspond to a necessary area of a sample; and

irradiating the ~~sample~~ active optical element with laser light; and

guiding the laser light from the active optical element to the sample, via a guide optical system positioned between the active optical element and the sample, so as to irradiate a portion of the sample corresponding to the necessary area with the laser light. ~~through the pattern formed on the active optical element to obtain the necessary area from the sample.~~

24. (Previously Presented) The microdissection method according to claim 23, wherein a part of the sample which surrounds the necessary area is selectively irradiated with the laser light in accordance with the pattern formed on the active optical element and is evaporated, thereby cutting the necessary area from the sample.

25. (Previously Presented) The microdissection method according to claim 24, further comprising:

projecting an image of the pattern formed on the active optical element onto the sample;

obtaining an observation image of the sample; and

setting the pattern formed on the active optical element based on the obtained observation image.

26. (Previously Presented) The microdissection apparatus according to claim 23, wherein a part of the sample excluding the necessary area is selectively irradiated with the laser light in accordance with the pattern formed on the active optical element, and the selective irradiation of the laser light is repeatedly performed while changing positions on the sample that are irradiated to irradiate all desired positions on the sample; and

wherein the method further comprises converging a beam of the irradiated laser light onto a beam spot on the sample; and

relatively moving the beam spot of the converged beam of laser light with respect to the sample completely around an area to be collected including the necessary area;

wherein a part of the sample irradiated with the converged beam of laser light is evaporated, such that the area to be collected including the necessary area is cut from the sample.

27. (Previously Presented) The microdissection apparatus according to claim 1, further comprising an observation optical system, which acquires an observation image of the sample.

28. (Previously Presented) The microdissection apparatus according to claim 27, wherein the observation optical system comprises an erecting microscope.

29. (Previously Presented) The microdissection apparatus according to claim 27, wherein the observation optical system comprises an inverted microscope.

30. (Previously Presented) The microdissection apparatus according to claim 3, wherein the laser light irradiation optical system and the observation optical system have an objective lens in common.

31. (Previously Presented) The microdissection apparatus according to claim 27, wherein the laser light irradiation optical system and the observation optical system have an objective lens in common.

32. (Previously Presented) The microdissection apparatus according to claim 3, wherein the observation optical system comprises an erecting microscope.

33. (Previously Presented) The microdissection apparatus according to claim 3, wherein the observation optical system comprises an inverted microscope.

34. (Previously Presented) The microdissection apparatus according to claim 10, wherein the transmission type active optical element comprises a liquid crystal substrate.

35. (Previously Presented) The microdissection apparatus according to claim 11, wherein the reflection type active optical element comprises a micro mirror array.

36. (Previously Presented) The microdissection apparatus according to claim 1, wherein the laser light irradiation optical system selectively irradiates a part of the sample that surrounds the necessary area with the laser light in accordance with the pattern formed on the active optical element, the laser light applied to the sample is relatively moved on the sample by a movement mechanism completely around an area to be collected including the necessary area, and a part of the sample irradiated with the converged beam of laser light is evaporated to be cut, such that the area to be collected including the necessary area is cut from the sample.